

APPARATUS AND METHOD FOR RECONSTRUCTION OF VOLUMETRIC  
IMAGES IN A DIVERGENT SCANNING COMPUTED TOMOGRAPHY SYSTEM

ABSTRACT OF THE DISCLOSURE

An apparatus and method for reconstructing image data for a region are  
5 described. A radiation source and multiple one-dimensional linear or two-dimensional  
planar area detector arrays located on opposed sides of a region angled generally along a  
circle centered at the radiation source are used to generate scan data for the region from  
a plurality of diverging radiation beams, i.e., a fan beam or cone beam. Individual  
pixels on the discrete detector arrays from the scan data for the region are reprojected  
10 onto a new single virtual detector array along a continuous equiangular arc or cylinder  
or equilinear line or plane prior to filtering and backprojecting to reconstruct the image  
data.